

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/010,846	NARAYANASWAMY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	NGOC V DINH	2187	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 08/26/2004.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☒ The drawings filed on 12/05/2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### Supplemental Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this Examiner's Amendment was given in a telephone interview with Mr. Michael Gencarella (Reg. 44,703) on October 4, 2004.

2. The purpose of this Supplemental Amendment is to correct the errors in the previous Examiner Office Action filed 10/04/2004. In section 1 (Examiner's Amendment) of the previous Office Action, the Examiner did not instruct in which claim:

- a) the limitation "the first disk drive being associated ... with a second counter" should be deleted, and
- b) the limitation -- and a counter associated with the least busy disk drive, the counter being incremented in response to receiving the read command, and decremented in response to an interrupt generated upon completion of processing the read command -- should be added.

Therefore the below described amendments to the claim are necessary to further clarify the claim invention:

#### IN THE CLAIM:

In claim 15, lines 6-7, delete "the first disk drive being associated with a first counter, the second disk drive being associated with a second counter".

In claim 15, line 12, after "command is sent to the least busy disk drive", add --, and a counter associated with the least busy disk drive, the counter being incremented in response to receiving the read command, and decremented in response to an interrupt generated upon completion of processing the read command. --.

### **Reasons for allowance**

3. The primary reasons for allowance of claim 1 in the instant application is the combination with the inclusion of the limitation of “ determining which of the first and second counters is a lower value counter or if the first and second counters are of equal value; incrementing the lower value counter or the first counter if counters are of equal value; and directing the read command to the drive associated with the lower value counter or the first drive if the counters are of equal value”.

The primary reasons for allowance of claims 7, 11, 15 and 21 in the instant application is the combination with the inclusion of the limitation of “ incrementing the counter associated with the least loaded disk drive; generating an interrupt; and decrementing the counter associated with the least loaded disk drive in response to the generated interrupt”.

Because claims 2-6, 8-10, 12-14, 16-20 and 22 depend directly or indirectly on claims 1, 7, 11, 15 and 21. These claims are considered allowable for at least the same reasons noted above.

### **Conclusion**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Kawase et al PN 6,651,082 discloses dynamically changing load balance.
- b. Bowman-Amuah PN 6,578,068 discloses load balancer environment.
- c. Scott et al PN 6,560,717 discloses load balancing management.
- d. Karger et al PN 6,430,618 discloses distributing requests among resources.
- e. Denecheau et al PN 6,421,317 automatic load balancing.
- f. Arndt et al PN 6,189,065 discloses interrupt load balancing.

5. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ngoc Dinh whose telephone number is (571) 272-4191. The examiner can normally be reached on Monday-Friday 8:30 AM-5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald A. Sparks, can be reached on (571) 272-4201. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



NGOC DINH

Patent Examiner

ART UNIT 2187

February 18, 2005



**DONALD SPARKS**  
**SUPERVISORY PATENT EXAMINER**